3.7. Hydrology and Water Quality

This section addresses potential hydrology and water quality impacts that may result from construction and/or operation of the Belmont Village Encinitas-by-the-Sea Project. The following discussion addresses the existing conditions in the project area, identifies applicable regulations, identifies and analyzes environmental impacts, and recommends measures to reduce or avoid adverse impacts anticipated from implementation of the project, as applicable.

The analysis in this section is based on the following technical studies.

- Preliminary Hydrology Study for Encinitas Senior Apartments, 3111 Manchester Avenue, Urban Resource Corporation, June 17, 2019 (Appendix H-2).
- Stormwater Intake Form and Priority Development Project Stormwater Quality Management Plan (SWQMP) For Encinitas Senior Apartments, 3111 Manchester Avenue, Urban Resource Corporation, June 17, 2019 (Appendix H-1).

The Initial Study identified that the Project would not conflicts with a water quality control plan or sustainable groundwater management plan (Appendix A-2). This issue is not further analyzed in this DEIR. This section focuses on impacts to drainage, surface water, and surface water quality.

Scoping Issues Addressed

During the scoping period for the Project, a scoping meeting was conducted, and written comments were received from agencies and the public. The following issues related to hydrology and water quality were raised by Caltrans and are addressed in this section:

- Provide hydraulics studies, drainage and grading plans to Caltrans for review.
- Provide a pre-and post-development hydraulics and hydrology study showing drainage configurations and patterns.
- Provide drainage plans and details, include detention basin details of inlets/outlet.
- Provide a contour grading plan with legible callouts and minimal building data. Show drainage patterns and Caltrans' Right-of-Way (R/W).

3.7.1. Existing Conditions

Regional Drainage

The Project site is in the Carlsbad Watershed Management Area (WMA), which is approximately 211 square miles and is formed by a group of six individual watersheds in northern San Diego County (RWQCB, 2015). The City of Encinitas is situated entirely within the Carlsbad Hydrologic Unit (Carlsbad Watershed Management Area) and is split between the San Marcos Watershed to the

north and Escondido Creek Watershed to the south. The City is naturally divided by eight (8) distinct drainage areas (sub-basins); Cardiff, Lower Escondido, La Orilla, La Costa South, Leucadia, Encinitas, Rancho Santa Fe, and Lux Canyon sub-basins. In general, the City drains to three creeks: Cottonwood Creek, Encinitas Creek, and Escondido Creek. Cottonwood Creek drains the heart of Encinitas and discharges to the Pacific Ocean at Moonlight Beach. Encinitas Creek drains the north-central portion of the city into Batiquitos Lagoon. Escondido Creek drains the southern and northeast (Olivenhain) portion of the city into San Elijo Lagoon. San Elijo Lagoon is a 303(d) impaired water body for eutrophic, indicator bacteria and sediment/siltation.

Local Surface Waters and Drainage

The existing drainage from the project site and off-site run-on from existing residential and undeveloped areas north of the Project site are collected within a natural earthen channel along the north side of Manchester Avenue. Flows are then collected via six (6) l storm drain inlets and conveyed to the south side of Manchester via 18" and 24" corrugated metal pipe (CMP) storm drain culvert crossings that discharge into the San Eligo Lagoon Regional Park drainage area (Figure 2-10, Off-Site Stormwater Culverts). The San Elijo Lagoon outlets into the Pacific Ocean.

Post development, the runoff from the Project site would be captured and routed to three (3) proposed bioretention basins via an on-site reinforced concrete pipe (RCP) storm drain (include figure that denotes location. Runoff from the disturbed areas within the limits of grading will be captured and conveyed to the bioretention/biofiltration basins for treatment. Offsite stormwater run-on would be collected by proposed concrete trapezoidal channels and conveyed through the Project site via proposed RCP/ RCB storm drains for discharge directly to the San Elijo Lagoon.

Flooding

As illustrated on Federal Emergency Management Agency (FEMA) map panel 06073C1045G (dated December 20, 2019), the southern edge of the Project site along Manchester Avenue is located in Flood Zone A (FEMA, 2019). This portion of the Project site is therefore determined to be within the FEMA-mapped 100-year floodplain (Figure 3.7-1).

3.7.2. Regulatory Framework

Federal

Clean Water Act

The federal Water Pollution Control Act (or Clean Water Act [CWA]) is the principal statute governing water quality. It establishes the basic structure for regulating discharges of pollutants into the waters of the United States and gives the US Environmental Protection Agency (EPA) authority to implement pollution control programs, such as setting wastewater standards for industry. The statute's goal is to completely end all discharges and to restore, maintain, and preserve the integrity

of the nation's waters. The CWA regulates direct and indirect discharge of pollutants; sets water quality standards for all contaminants in surface waters; and makes it unlawful for any person to discharge any pollutant from a point source into navigable waters unless a permit is obtained under its provisions. The CWA mandates permits for wastewater and stormwater discharges; requires states to establish site-specific water quality standards for navigable bodies of water; and regulates other activities that affect water quality, such as dredging and the filling of wetlands. The CWA funds the construction of sewage treatment plants and recognizes the need for planning to address nonpoint sources of pollution. Section 402 of the CWA requires a permit for all point source (a discernible, confined, and discrete conveyance, such as a pipe, ditch, or channel) discharges of any pollutant (except dredge or fill material) into waters of the United States.

Section 303(d) of the CWA requires that states assess the quality of their waters every two years and publish a list of those waters not meeting water quality standards. For water bodies placed on the 303(d) List of Water Quality Limited Segments, states are required to develop total maximum daily loads (TMDLs) for the pollutant(s) that are causing standards impairment. Once a water body is placed on the 303(d) List of Water Quality Limited Segments, it remains on the list until a TMDL is adopted and/or water quality standards are attained. As identified in the 2012 California 303(d) List and TMDL Priority Schedule (303(d) List). San Elijo Lagoon is listed as an impaired water body for sediment/siltation, bacteria indicators, and eutrophic condition.

National Pollutant Discharge Elimination System

Under the National Pollutant Discharge Elimination System (NPDES) program (under Section 402 of the CWA), all facilities that discharge pollutants from any point source into waters of the United States must have a NPDES permit. The term "pollutant" broadly applies to any type of industrial, municipal, and agricultural waste discharged into water. Point sources can be publicly owned treatment works (POTWs), industrial facilities, and urban runoff. (The NPDES program addresses certain agricultural activities, but the majority are considered nonpoint sources and are exempt from NPDES regulation.) Direct sources discharge directly to receiving waters, and indirect sources discharge to POTWs, which in turn discharge to receiving waters. Under the national program, NPDES permits are issued only for direct, point-source discharges. The National Pretreatment Program addresses industrial and commercial indirect dischargers. Municipal sources are POTWs that receive primarily domestic sewage from residential and commercial customers. Specific NPDES program areas applicable to municipal sources are the National Pretreatment Program, the Municipal Sewage Sludge Program, Combined Sewer Overflows, and the Municipal Storm Water Program. Nonmunicipal sources include industrial and commercial facilities. Specific NPDES program areas applicable to these industrial/commercial sources are: Process Wastewater Discharges, Non-process Wastewater Discharges, and the Industrial Storm Water Program. NPDES issues two basic permit types: individual and general. Also, the EPA has recently focused on integrating the NPDES program further into watershed planning and permitting (USEPA, 2012).

The NPDES has a variety of measures designed to minimize and reduce pollutant discharges. All counties with storm drain systems that serve a population of 100,000 or more, as well construction sites one acre or more in size, must file for and obtain an NPDES permit. Another measure for minimizing and reducing pollutant discharges to a publicly owned conveyance or system of conveyances (including roadways, catch basins, curbs, gutters, ditches, man-made channels and storm drains, designed or used for collecting and conveying stormwater) is the EPA's Storm Water Phase I Final Rule. The Phase I Final Rule requires an operator (such as a city) of a regulated municipal separate storm sewer system (MS4) to develop, implement, and enforce a program (e.g., best management practices [BMPs], ordinances, or other regulatory mechanisms) to reduce pollutants in postconstruction runoff to the city's storm drain system from new development and redevelopment projects that result in the land disturbance of greater than or equal to one acre.

State

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act (Water Code Sections 13000 et seq.) is the basic water quality control law for California. Under this Act, the State Water Resources Control Board (SWRCB) has ultimate control over state water rights and water quality policy. In California, the EPA has delegated authority to issue NPDES permits to the SWRCB. The state is divided into nine regions related to water quality and quantity characteristics. The SWRCB, through its nine Regional Water Quality Control Boards (RWQCBs), carries out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a water quality control plan or basin plan that recognizes and reflects the regional differences in existing water quality, the beneficial uses of the region's ground and surface water, and local water quality conditions and problems. Encinitas is in the San Diego Basin, Region 9, in the Upper Santa Ana Watershed. The water quality control plan for the San Diego Basin was updated in 2016. This Basin Plan gives direction on the beneficial uses of the state waters in Region 9; describes the water quality that must be maintained to support such uses; and provides programs, projects, and other actions necessary to achieve the standards in the Basin Plan.

Fish and Game Code Section 1602

Section 1602 of the California Fish and Game Code regulates activities affecting the geomorphology and function of the state's rivers, streams, and lakes. Administered by the California Department of Fish and Wildlife (CDFW), it requires CDFW approval for activities that would:

- Divert or obstruct the natural flow of a river, stream, or lake.
- Modify the bed, channel, or bank of a river, stream, or lake.
- Use material from the bed, channel, or bank of a river, stream, or lake.

- Place debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

Persons or organizations proposing such activities must notify CDFW in writing prior to beginning work and must provide detailed information on the location and nature of the proposed work. If granted, authorization takes the form of a Streambed Alteration Agreement or Lakebed Alteration Agreement, and typically includes terms and conditions required to protect water quality, aquatic system function, and habitat value. Section 1602 is sometimes viewed as providing a state parallel to the federal protection afforded under Section 404 of the CWA, and this is broadly true, but CDFW's particular responsibility focuses on the value of the state's watercourses in providing habitat for fish and wildlife. As such, CDFW's jurisdiction is typically understood as extending across the "bed and banks" of the aquatic system in question; it generally encompasses not only the active channel but also the adjacent riparian corridor and may be more extensive than Corps jurisdiction under Section 404.

Storm Water Pollution Prevention Plans (SWPPP)

Pursuant to the CWA, in 2001, the SWRCB issued a statewide general NPDES Permit for stormwater discharges from construction sites (NPDES No. CAS000002). Under this statewide permit, construction sites with a disturbed area of one or more acres are required to obtain individual NPDES permits for stormwater discharges or be covered by the Construction General Permit. Coverage by the general permit is accomplished by completing and filing a notice of intent with the SWRCB and developing and implementing a Storm Water Pollution Prevention Plan (SWPPP). Each applicant under the Construction General Permit must ensure that a SWPPP is prepared prior to grading and is implemented during construction. The SWPPP must estimate sediment risk from construction activities to receiving waters; list BMPs to be implemented on the construction site to protect stormwater runoff; and contain a visual monitoring program, a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs, and a monitoring plan if the site discharges directly to a water body listed on the state's 303(d) list of impaired waters.

Regional

Water Quality Improvement Plan

The MS4 Permit for the part of San Diego County in the San Diego RWQCB region, Order No. R9-2013- 0001, provides a pathway for the co-permittees on the MS4 Permit to select and address the highest priority water quality issues. This process is incorporated in watershed-specific water quality improvement plans (WQIPs). RWQCB Region 9 is divided into nine WMAs. The WQIPs are developed through a collaborative effort between the co-permittees in each WMA and other key stakeholders, including the RWQCB. The WQIPs include descriptions of the highest-priority pollutants or conditions in a specific watershed, goals and strategies to address those pollutants or conditions, and schedules for those goals and strategies.

Local

City of Encinitas Jurisdictional Runoff Management Program

The Jurisdictional Runoff Management Program sets forth strategies, standards, and protocols to address the priorities and goals established in the WQIP. The purpose of this document is to present an integrated programmatic approach to reducing the discharge of pollutants from the MS4 to the maximum extent practicable (MEP) standard, and to protect and improve the quality of water bodies in Encinitas. It describes operational programs and activities developed to meet the requirements of Municipal Stormwater Permit and serves as the implementation mechanism for WQIP strategies. The highest-priority water quality conditions in the area are discharges of bacteria (City of Encinitas, 2017).

City of Encinitas Stormwater Best Management Practices Manual, Part II

The City of Encinitas Stormwater Best Management Practices Manual, Part II (BMP Manual) addresses updated stormwater requirements and defines the formal process and procedure to select and design BMPs for development project to ensure compliance with minimal local standards in conformance with the MS4 Permit.

Encinitas General Plan

Land Use Element

Policy 2.8:	Development shall not be permitted where it will result in significant degradation of ground, surface, or ocean water quality, or where it will result in significant increased risk of sewage overflows, spills, or similar accidents. (Coastal Act/30231)
Policy 2.10:	Development shall not be allowed prematurely, in that access, utilities, and services shall be available prior to allowing the development. (Coastal Act/30252)
Policy 8.2:	Development within coastal and flood plain areas identified in the Land Use and Resource Management Elements must be limited, designed to minimize hazards associated with development in these areas, and to preserve area resources. Within the floodway, channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to necessary water supply projects, flood control projects where no other method for protecting existing public or private structures is feasible and where such protection is necessary for public safety or to protect existing development, and other development where the primary function is the improvement of fish and wildlife habitats. No development shall occur in the 100-year Floodplain that is not consistent and compatible with the associated flood hazard. Only uses which are safe and compatible with

periodic flooding and inundation shall be considered, such as stables, plant nurseries, a minimum intrusion of open parking, some forms of agriculture, and open space preservation, as appropriate under zoning, and subject to applicable environmental review and consistency with other policies of this Plan. No grading or fill activity other than the minimum necessary to accommodate those uses found safe and compatible shall be allowed. Such grading shall not significantly redirect or impede flood flows or require floodway modifications. Exceptions from these limitations may be made to allow the following:

a. Minimum private development (defined as one dwelling unit per legal parcel under residential zoning, and an equivalent extent of development under non-residential zoning) only upon a finding that strict application thereof would preclude a minimum use of the property.

b. Development of circulation element roads, other necessary public facilities, flood control projects where no feasible method for protecting existing public or private structures exists and where such protection is necessary for public safety or to protect existing development, and other development which has as its objective the improvement of fish and wildlife habitat.

c. Limited reconfiguration of the flood plain in previously degraded areas provided it is determined by the City that the reconfiguration of the flood plain is incidental to the improvement of an overall storm water system and that the reconfigured storm water system is substantially based on natural channels with vegetation to accommodate storm water management. This is applicable to the El Camino Real creek corridor draining into Encinitas Creek.

These exceptions shall be allowed only to the extent that no other feasible alternatives exist and minimum disruption to the natural floodplain environment is made. The City shall not approve subdivisions or boundary line adjustments which would allow increased impacts for development in 100-year floodplains. For specific policy provisions regarding wetlands which may be associated with floodplains, refer to Resource Management Element Policy 10.6. (Coastal Act/30253) *Policy 8.2 amended 1/30/91, 9/21/94 (Reso. 94-29) and 5/11/95 (Resolution 95-32)*

Public Safety Element

Policy 2.6: Except as provided in Public Safety Policy 1.1, no development or filling shall be permitted within any 100-year floodplain.

Resource Management Element

Policy 1.1: Require new development to utilize measures designed to conserve water in their construction.

Policy 2.1:	In that ocean water quality conditions are of utmost importance; the City shall aggressively pursue the elimination of all forms of potential unacceptable pollution that threatens marine or human health. (Coastal Act/30230/30231)
Policy 2.3:	To minimize harmful pollutants from entering the ocean environment from lagoons, streams, storm drains and other waterways containing potential contaminants, the City shall mandate the reduction or elimination of contaminants entering all such waterways; pursue measures to monitor the quality of such contaminated waterways, and pursue prosecution of intentional and grossly negligent polluters of such waterways. (Coastal Act/30230/30231/30233)

City of Encinitas Municipal Code

EMC 20.08 Stormwater Management

The purposes of this chapter is to protect the health, safety and welfare of the public by regulating all discharges into the Stormwater Conveyance System and the Waters of the State in order to preserve and enhance water quality for beneficial uses. Chapter 20.08 promotes these purposes by:

A. Prohibiting non-Stormwater discharges to the Stormwater Conveyance System;

B. Eliminating pollutants in Stormwater to the Maximum Extent Practicable, including pollutants from both point and non-point sources;

C. Prohibiting activities which cause, or contribute to, exceedance of state and federal Receiving Water quality objectives; and

D. Protecting Watercourses from disturbance and pollution.

The intent of this Chapter is to use the police power of the City to protect, enhance, and regulate water quality in a manner which complies with all applicable laws related to water quality, including the federal Clean Water Act, the state Porter-Cologne Water Quality Control Act, and the California Regional Water Quality Control Board San Diego Region Order No. R9-2013-0001 adopted on May 8, 2013, NPDES No. CAS0109266 and any subsequent amendments, revisions, or reissuance of the permit.

EMC 23.24.480 Drainage Requirements

This section of the EMC provides an outline for drainage requirements during excavation and grading activities in the City. The requirements relate to disposal, site drainage, drainage terraces, and overflow protection.

3.7.3. Thresholds for Determination of Significance

This section lists the thresholds used to conclude whether a hydrology/water quality impact would be significant.

Guidelines for Determination of Significance

A project would be considered to have a significant impact if it would:

1) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.

2) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

3) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces in a manner which would:

   a) Result in substantial erosion or siltation on- or off-site.

   b) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

   c) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional resources of polluted runoff.

4) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

5) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

3.7.4. Analysis of Project Effects and Significance Determination

Impact 3.7-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.

Stormwater runoff generally discharges into storm drains and/or flows directly to creeks, rivers, lakes, and the ocean. If polluted, it can result in harmful effects on drinking water, recreational water, and wildlife. The characteristics of stormwater runoff depend on site conditions (e.g., land use, impervious cover, pollution prevention, types and amounts of best management practices), rain events, soil type and particle sizes, multiple chemical conditions, the amount of vehicular traffic,

and atmospheric deposition. Major pollutants typically found in runoff include sediments, nutrients, oxygen-demanding substances, heavy metals, petroleum hydrocarbons, pathogens, and bacteria. The majority of stormwater discharges are considered nonpoint sources and are regulated by an NPDES Municipal General Permit or Construction General Permit.

A net effect of development can be to increase pollutant export to adjacent streams and downstream receiving waters. However, an important consideration in evaluating stormwater quality from a site is to assess whether it impairs the beneficial use of the receiving waters. Receiving waters can assimilate a limited quantity of various constituent elements, but there are thresholds beyond which the measured amount becomes a pollutant and results in an undesirable impact.

Potential water quality impacts associated with construction activities include the discharge of construction-related sediment and hazardous materials (e.g., fuels). However, by obtaining coverage under the State General Construction Stormwater Permit and implementing best management practices during construction as required by a SWPPP construction-related water quality impacts would be reduced to less than significant.

Additional urban runoff pollutants within the area could include litter, trash, and debris; bacteria and viruses from pet feces; oil, grease, metals, and toxic chemicals from vehicle hydrocarbons; and sediments, nutrients, pesticides, and fertilizers. In the existing condition, runoff is collected within a natural earthen channel along the north side of Manchester Avenue and is conveyed to the south side of Manchester Avenue into the San Eligo Lagoon.

The proposed site plan divides the Project site into three drainage management areas (DMAs), each with a proposed bioretention basin for water quality treatment and for hydromodification control. Stormwater will be collected by an on-site RCP storm drain system and conveyed to the three bioretention basins. Only runoff from the disturbed areas within the limits of grading will be captured and conveyed to the bioretention basins for treatment. Offsite runoff will be collected by proposed concrete trapezoidal channels and conveyed through the Project site via proposed RCP/RCB storm drain, directly to the San Elijo Lagoon. The landscaped parkway and proposed public sidewalk along Manchester Avenue, along with a small portion of the emergency access driveway, which is proposed to drain towards Manchester Avenue, is considered a Self-Mitigating Area, and De Minimis DMA per Sections 5.2.1 and 5.2.2, of the Encinitas BMP Design Manual.

Improvements in Manchester Avenue include widening of the street on the north side, striping, and installation of culvert crossings into the San Elijo Lagoon. Additionally, a vegetated swale will be provided in the parkway along the project frontage, with curb openings, to allow street flows to enter into the vegetated swale for some natural treatment, prior to outletting into the Lagoon.

The bioretention basins will provide hydromodification management flow control and stormwater pollutant control to meet the requirements of the San Diego RWQCB municipal stormwater permit. The proposed Project will increase peak storm flows and onsite stormwater detention is incorporated

into the project design to mitigate the increase in peak storm flows for the 100-year storm frequency. Mitigation of increased peak flows for the 100-year storm frequency will be addressed with the proposed bioretention basins, and if necessary, underground storage pipes. All three basins will be unlined and designed to retain and infiltrate a significant portion of storm flows.

With the proposed improvements to the existing storm drain system, the proposed Project would not result in violation of water quality standards or waste discharge requirements. Rather, it would improve upon existing conditions through the capture and treatment of stormwater before its release toward the lagoon to the south. Potential impacts to water quality would be less than significant. No mitigation would be required.

Impact 3.7-2: Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

The proposed Project would not include development activities that could otherwise deplete groundwater supplies. Infiltration would be maintained through project design including detention basins and low impact design requirements of the MS4 permit. This includes management practices, control techniques, system design and engineering methods, and other measures as appropriate. The proposed Project would not interfere substantially with groundwater recharge, and potential impacts to groundwater supplies would be less than significant. No mitigation would be required.

Impact 3.7-3a: Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces in a manner which would result in substantial erosion or siltation on- or off-site.

With implementation of BMPs during construction as required by a SWPPP, the proposed Project would not result in substantial erosion or siltation on- or off-site. Post construction BMPs described in the SWQMP (Urban Resource Corporation, 2019a, Appendix H-1) include repairing/reseeding/replanting eroded areas and adjusting the irrigation system, adding erosion control blanket, adding stone at flow entry points, or minor regrading to restore proper drainage according to the original plan. As indicated, with implementation of BMPs the Project would maintain and improve the existing storm drainage. Thus, no potential for substantial erosion or siltation would occur on- or off- site. Impacts would be less than significant and no mitigation would be required.

Impact 3.7-3b: Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

As noted in the Preliminary Hydrology Report (Appendix H-2), the Project site would be divided into three drainage management areas. The proposed Project would alter the existing drainage pattern of the site but would not increase the rate or amount of surface runoff in a manner that would result in flooding on or off the Project site. Off-site flows entering the Project site would be captured and conveyed around the on-site stormwater treatment system prior to release off-site into the San Elijo Lagoon.

The proposed bioretention/biofiltration basins will provide mitigation for the 100-year storm event peak discharge. In addition, the project would not alter the course of a stream or river. Therefore, impacts regarding flooding on- or off-site would be less than significant. No mitigation would be required.

Impact 3.7-3c: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces in a manner which would substantially increase the rate or amount of surface runoff in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional resources of polluted runoff.

As noted in the Preliminary Hydrology Report (Appendix H-2), the proposed drainage improvements include additional curbs and gutters, the use of biofilters, on-site storage of stormwater in basins with outlets to regulate the flow rate and duration of stormwater released, and bioretention basins to slow and sequester runoff.

Based on the preliminary hydrology analysis for the existing and proposed condition, there will be an increase in peak flowrate of approximately 17% for the 100 year and 25-year storm events, due to the proposed development. Further analysis of the storm runoff volume for the 100-year storm event indicates an increase in runoff volume due to the proposed development. Three biofiltration basins will be provided for the purpose of water quality treatment and hydromodification control but will also act to reduce and slow the release of the volume, as the basins provide 15” of ponding, and subsurface media pore space, and gravel void space for storage. Additionally, the underdrain flow control system will restrict flow release with an orifice. Based on preliminary evaluation of the sizes and storage volumes available in the three biofiltration basins, additional storage is not necessary, and any increase in storm volumes for the 100-year storm event would be mitigated by

the proposed biofiltration basins. Potential drainage impacts would be reduced to less than significant. No mitigation would be required.

Impact 3.7-4: Project increases in flood hazards, tsunami, or seiche zones, risk release of pollutants due to project inundation.

According to the California Emergency Management Agency Tsunami Inundation Map (California Emergency Management Agency, 2009), the Project site is not located in a tsunami inundation area. Seiches are standing waves that occur on the surface of inland bodies of water (i.e., lakes, harbors, bays, or reservoirs) and are typically caused by seismic activity. The Project site is not within the inundation zone of the nearest reservoir (San Dieguito Reservoir) and thus, would not be affected by a seiche if a seismic event were to occur.

In addition, although the southwestern edge of the Project site is located within the 100-year floodplain, no habitable structures would be constructed within the 100-year floodplain. This area would be developed with the proposed parking lot and landscaping features. The site would be constructed to include offsite diversion of stormwater and other features that would be consistent with construction proposed in a 100-year floodplain. Further, relative to the entire urbanized watershed in which the project site is located, the Project area would not contain substantial or unusual amounts of any pollutants that would be at risk of release in case of flooding in the area. Based on the proposed land use and the majority of the Project site's construction outside of the floodplain, the possibility of the Project causing a risk of a release of pollutants due to project inundation would be less than significant. Additionally, improvements planned for the San Elijo Lagoon will reduce the flood elevations along Manchester Avenue and remove the roadway from the 100-year floodplain (USACOE, 2013). No mitigation would be required.

3.7.5. Mitigation Measures

With the incorporation of construction and post-construction best management practices, the proposed Project would not result in significant hydrology or water quality impacts. No mitigation would be required.

3.7.6. Cumulative Impact Analysis

The geographic scope for cumulative hydrology and water quality impacts includes the surrounding watershed, areas surrounding the project site, and tributaries to the ocean. Future development that could contribute to a cumulative hydrology and water quality impact, as listed on Table 2-5, would be subject to the same requirements as the proposed Project and would be required to apply with the San Diego RWQCB for an NPDES permit, which would include best management practices to prevent water quality impacts during construction and operation. Therefore, cumulative impacts related to hydrology and water quality would be less than significant and the project's contribution to a cumulative impact would be less than cumulatively considerable.

SOURCE: Basemap- Esri; FEMA NFHL, 2019

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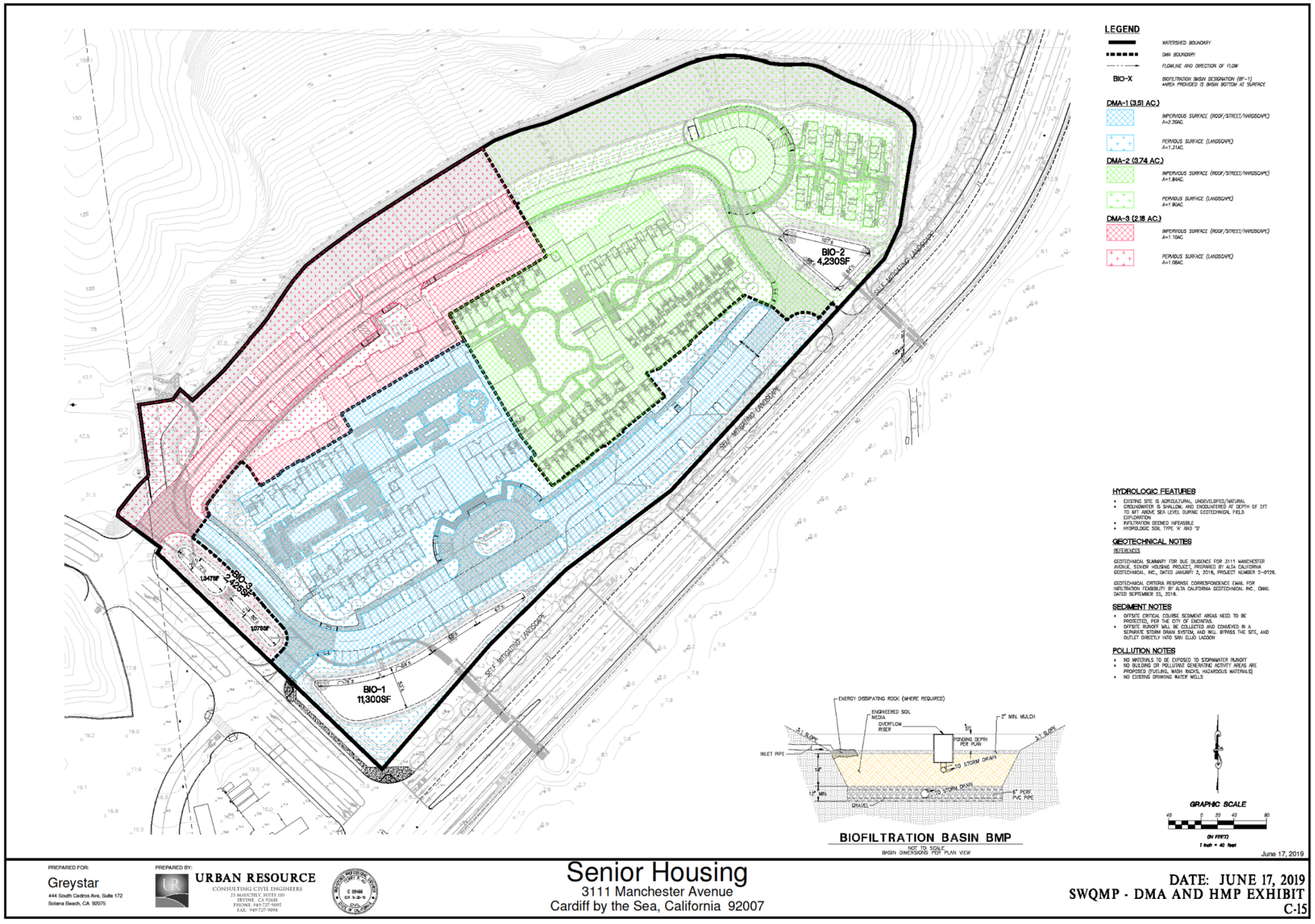
N

0 0.125 0.25 Miles

Floodplain Areas
Belmont Village Encinitas-by-the-Sea
Figure 3.7-1



SOURCE: Urban Resource Consulting Civil Engineers, 2019

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Project Drainage
Belmont Village Encinitas-by-the-Sea
Figure 3.7-2

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